

REMARKS

In the Official Action the Examiner rejects claims 1-8, 12-19, 23- 26 and 29 under 35 U.S.C. 103 as being unpatentable over a Princeton University publication which the Examiner recites as “Naomi et. al” in view of U.S. Patent No. 6,133,867 to Eberwine et al. Before commenting on the rejections, it should be noted that the Princeton University article is not by Professor Naomi, but rather by Professor Leonard. Naomi is the first name of the professor. As such, it would probably be better form to refer the article as Leonard et al. as opposed to Naomi et al.

The Leonard et al. reference is about the control of multiple autonomous vehicles using artificial potentials and virtual leaders (see abstract). It is clear that both “artificial potentials” and “virtual leaders” are artificial constructs for computational control of vehicles..

A “virtual leader” is understood to be a purely theoretical element that can be positioned to influence the behaviours of the vehicles (in particular to produce flocking and schooling behaviours). It would be possible to use a virtual leader to encourage a group of vehicles to move in a particular direction. Alternatively, the virtual leaders can be used to force a particular configuration of the vehicles – thus, in column 8, “Case S3” shows the use of two virtual leaders to force a pair of vehicles into difference configurations (side-by-side, or one behind the other).

Does the Examiner contend that there is any disclosure or suggestion in Leonard et al. that the “virtual leaders” are intended to be physically manifested to a human user? If so, what portion or portions of Leonard et al. does the Examiner rely upon? Virtual leaders are believed to be merely artificial entities intended to impose particular influences on computed desired positions/movement directions of the vehicles.

At the bottom of page 2 of the Official Action, the Examiner has argued that col.4, lines 31-33 of Leonard et al. discloses determining a position of the user relative to the target path. The passage concerned does refer to the absolute position of the *i*th vehicle so presumably this position would have to be determined in some way.

At the top of page 3 of the Official Action, the Examiner has argued that col.8, lines 25-28 of Leonard et al. discloses determining a location at which to position a virtual audio beacon onward from the user’s current position. However, the passage referred to by the Examiner is the “Case S3” noted above where the virtual leaders are positioned to achieve a particular configuration of the vehicles. And while it be argued that a “one behind the other” configuration implies a known direction of movement, the current direction of movement of a vehicle is not the same as a “target path” as recited by claim 1.

The Examiner admits that Leonard et al. does not disclose “that virtual leader/beacon has an audio/sound capability” (see the Official Action, page 3, line 7). The Examiner relies on Eberwine to provide this feature and while Eberwine apparently discloses providing

an audible collision warning and avoidance commands (the voice unit 400 appears to be a simple audio output for giving evasive action commands to a pilot - see col.11, lines 18-22), its relevance to Leonard et al. is, with all due respect, a mystery.

The Examiner's argument about the motivation for combining Leonard et al. and Eberwine is simply not understood. As already noted, the "virtual leaders" of Leonard et al. are computational artefacts that are not intended to have a real-world manifestation. So why either equip or associate them with something having a real-world manifestation such as Eberwine's audio/sound capability?

The rejection based on Leonard and Eberwine just does not make sense and should be properly withdrawn. The rejections of claims 1-8, 12-19, 23-26 and 29 have been overcome. As such there is no need to discuss the rejections based on a purported combination of Lenoand et al. and Eberwine with Derman.

It is believed that the amended claims differ from the prior art at least in respect of the presentation of "multiple virtual audio beacons" which "together form a succession of beacons with each beacon being successively further down said target path onward from the user" as recited by amended claims 1 and 12. See, e.g., original claims 6 and 17 for support.

Claims 2-6, 13-17 and 23-29 have been cancelled without prejudice.

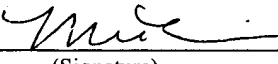
Reconsideration of this application as amended is respectfully requested.

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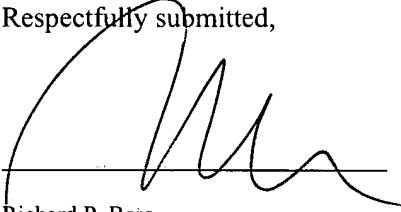
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